6 June 1960

MEMORANDUM FOR: Chief, Geographic Research

SUBJECT: Potential D/GG Requirements for Machine
          Translations

1. The following list of potential D/GG requirements for
machine translation is based on an assumption that it should apply
only to languages for which there may be a large bulk requirement
within the intelligence community.

    a. Languages and estimated pages required:

Language	Pages
Albanian	1,000
Arabic	1,000
Bulgarian	1,000
Chinese	7,000
Czech	1,300
French	3,900
German	3,800
Hungarian	1,500
Japanese	1,000
Korean	1,000
Polish	5,000
Portuguese	2,900
Rumanian	1,000
Russian	10,900
Slovene	3,000
Spanish	1,700

The figures specified apply only to the first year; needs would
doubtless drop off as back work is taken care of and experience
is applied to the exercise of selectivity.

    b. Requirements for translations in the following subjects,
fields, or disciplines would be submitted:

        1) Physical geography

            a) Geology
            b) Physiography
            c) Pedology
            d) Climatology
            e) Hydrography
            f) Oceanography

        2) Biogeography

            a) Plant and animal ecology

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3) Economic geography

   a) Natural resources
   b) Agricultural geography
   c) Water conservancy
   d) Forestry
   e) Fisheries
   f) Industrial geography
   g) Transportation geography

4) Human geography

   a) Population geography
   b) Census results
   c) Ethnography

5) Political geography

   a) International boundaries
   b) Internal boundaries and administrative structure
   c) Geopolitics

6) Military geography

   a. Relation of physical and cultural geographic
       factors to military operations

7) Geographic methodology

   a) Aerial photography techniques
   b) Survey and mapping techniques
   c) Cartography
   d) Sampling techniques for research

8) Geodesy, gravimetry

9) Astronomy

10) Mapping programs

11) Expeditions and explorations; regional description
     and travel accounts

     2. An unlimited translation capability, by broadening the base
of research resources available to us, might increase our ability to
answer priority requests for geographic intelligence. It might also
reduce the time presently required in the research phase of report
preparations. Neither of these benefits would materialize, however,

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unless: 1) the proposed translation capabilities are accompanied
by provision for additional clerical and semi-professional personnel
to receive, scan, collate, and file the output; 2) acceptable screen-
ing procedures are established to prevent analysts from being deluged
with mass translations of materials of sub-marginal value; 3) the
resultant translation is readily useable by analysts with a minimum
of editing or "retranslating"; 4) and an indexing capability is incor-
porated in the machine. We feel that for best results the accumulated
experience and expertise of the present corps of human translators
should be tied directly into the machine's programming. Such a staff
will also be required for handling maps, sketches, and photographs
contained in the materials being translated.

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Chief, Geography Division

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